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(54) **Recombinant haemophilus influenzae adhesin proteins**

(57) Recombinant production of Hia protein, in full-length and N-terminally truncated forms, of non-typeable strains of *Haemophilus influenzae*, is described. The nucleic acid and deduced amino acid sequences of Hia

genes of various strains of non-typeable and type c *Haemophilus influenzae* also are described.

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EUROPEAN SEARCH REPORT

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| <p>The present search report has been drawn up for all claims</p> | | | |
| Place of search | | Date of completion of the search | Examiner |
| Munich | | 24 June 2008 | Griesinger, Irina |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</p> <p>I: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons</p> <p>S: member of the same patent family, corresponding document</p> | | | |

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| Place of search | | Date of completion of the search | Examiner |
| Munich | | 24 June 2008 | Griesinger, Irina |
| CATEGORY OF CITED DOCUMENTS | | <p>Y : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date O : document cited in the application L : document cited for other reasons Z : member of the same patent family, corresponding document</p> | |
| <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> | | | |

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
1-10 (all claims partially)
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:
- ☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



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LACK OF UNITY OF INVENTION
SHEET B

Application Number

EP 07 02 1385

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Invention 1: 1-10 (all partially)

Haemophilus influenzae adhesin (Hia) protein from non-typeable strain 33 characterized by its corresponding nucleotide and protein sequences (SEQ ID NOs: 23 and 24). Provided are in addition to the full-length version (cf. claim 1), (N-) truncated versions, partially characterized by the corresponding amplifiable primer pair (cf. claim 2). Additionally provided is related subject-matter such as vectors, host cells, immunogenic compositions and methods using said compositions or sequence information.

Inventions 2-8: 1-10 (all partially)

Haemophilus influenzae adhesin (Hia) protein characterized by one of the following nucleotide/protein sequence pairs: SEQ ID NOs: 25/26 (strain 32), SEQ ID NOs: 27/28 (strain 29), SEQ ID NOs: 29/30 (strain M4071), SEQ ID NOs: 31/32 (strain K9), SEQ ID NOs: 33/34 (strain K22), SEQ ID NOs: 35/36 (strain API), or SEQ ID NOs: 37/38 (strain 12). For additional subject-matter, cf. Invention 1.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 02 1386

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on the European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-06-2008

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